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No. 1

Forest Service, United States Department of Agriculture

ALLEGHENY FOREST EXPERIMENT STATION*

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Technical Note No. 1

STUMP DIAMETER - D. B. H. RELATIONSHIP FOR
BEECH IN NORTHWESTERN PENNSYLVANIA 7.151

Measurements of stump taper taken on 43 standing beech trees at points 6", 12", 18", 24", 36" and 54" above the average ground level constitute the basis for the attached alinement chart. The D.B.H. range of these trees is from 8 to 29 inches with 9 trees in the 18 inch class.

Most of these beech are relict trees from the old growth hemlock-beech forest and have developed with species such as sugar and red maple, black cherry, white ash, basswood, yellow birch, and black birch following a heavy cutting for hemlock bark 62 years ago. Beech reached an average height of 81 feet at 18" D.B.H. in this stand, which is located on an east-facing lower slope.

This chart was made for local use on the Allegheny National Forest but may possibly be applied to beech on good sites, where fire has not scarred the trunks, elsewhere within the limits of northern hardwood forest in Pennsylvania. A practical application suggested is its use in timber trespass cases to determine the D.B.H. class to which beech stumps of various diameters and heights should be assigned in order to use volume tables based on D.B.H.

To determine from the chart the D.B.H. of a tree the stump measurements of which are known, lay a straight edge between the proper points on the right-hand (stump height) and left-hand (stump diameter) scales, and read the D.B.H. from its intersection with the middle scale. Thus, a 24" stump 20" high corresponds to a tree of 20.8" D.B.H., these three points lying on the same straight line.

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A. F. Hough
Assistant Silviculturist

* Maintained at Philadelphia, Pa., in cooperation with the University of Pennsylvania.

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